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=> s dihydroorotase and herbicide
 L13 5 DIHYDROOROTASE AND HERBICIDE

=> dup rem l13
 PROCESSING COMPLETED FOR L13
 L14 3 DUP REM L13 (2 DUPLICATES REMOVED)

=> d l14 1-3 ibib ab

L14 ANSWER 1 OF 3 SCISEARCH COPYRIGHT (c) 2006 The Thomson Corporation on STN

ACCESSION NUMBER: 2002:222230 SCISEARCH
 THE GENUINE ARTICLE: 525ZQ
 TITLE: Barbiturase, a novel zinc-containing amidohydrolase involved in oxidative pyrimidine metabolism
 AUTHOR: Soong C L; Ogawa J; Sakuradani E; Shimizu S (Reprint)
 CORPORATE SOURCE: Kyoto Univ, Grad Sch Agr, Div Appl Life Sci, Sakyo Ku, Kitashirakawa Oiwakecho, Kyoto 6068502, Japan (Reprint); Kyoto Univ, Grad Sch Agr, Div Appl Life Sci, Sakyo Ku, Kyoto 6068502, Japan
 COUNTRY OF AUTHOR: Japan
 SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1 MAR 2002) Vol. 277, No. 9, pp. 7051-7058.
 ISSN: 0021-9258.
 PUBLISHER: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650 ROCKVILLE PIKE, BETHESDA, MD 20814-3996 USA.
 DOCUMENT TYPE: Article; Journal
 LANGUAGE: English
 REFERENCE COUNT: 48
 ENTRY DATE: Entered STN: 22 Mar 2002
 Last Updated on STN: 22 Mar 2002

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Barbiturase, which catalyzes the reversible amidohydrolysis of barbituric acid to ureidomalonic acid in the second step of oxidative pyrimidine degradation, was purified to homogeneity from Rhodococcus erythropolis JCM 3132. The characteristics and gene organization of barbiturase suggested that it is a novel zinc-containing amidohydrolase that should be grouped into a new family of the amidohydrolases

superfamily. The amino acid sequence of barbiturase exhibited 48% identity with that of **herbicide** atrazine-decomposing cyanuric acid amidohydrolase but exhibited no significant homology to other proteins, indicating that cyanuric acid amidohydrolase may have evolved from barbiturase. A putative uracil phosphoribosyltransferase gene was found upstream of the barbiturase gene, suggesting mutual interaction between pyrimidine biosynthesis and oxidative degradation. Metal analysis with an inductively coupled radiofrequency plasma spectrophotometer revealed that barbiturase contains similar to 4.4 mol of zinc per mol of enzyme. The homotetrameric enzyme had K_m and V_{max} values of 1.0 mM and 2.5 μmol/min/mg of protein, respectively, for barbituric acid. The enzyme specifically acted on barbituric acid, and dihydro-L-*orotate*, alloxan, and cyanuric acid competitively inhibited its activity. The full-length gene encoding the barbiturase (*bar*) was cloned and overexpressed in *Escherichia coli*. The kinetic parameters and physicochemical properties of the cloned enzyme were apparently similar to those of the wild-type.

L14 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 1

ACCESSION NUMBER: 2001:185903 HCAPLUS
 DOCUMENT NUMBER: 134:233609
 TITLE: Potato **dihydroorotase** and cDNA and methods for screening for herbicides
 INVENTOR(S): Ehrhardt, Thomas; Lerchl, Jens; Stitt Nigel, Marc; Zrenner, Rita; Schroeder, Michael
 PATENT ASSIGNEE(S): Basf Aktiengesellschaft, Germany
 SOURCE: PCT Int. Appl., 38 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001018190	A2	20010315	WO 2000-EP8581	20000902
WO 2001018190	A3	20011011		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG CA 2379536 AA 20010315 CA 2000-2379536 20000902 BR 2000013798 A 20020514 BR 2000-13798 20000902 EP 1210437 A2 20020605 EP 2000-962429 20000902 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL JP 2003509026 T2 20030311 JP 2001-522401 20000902 AT 311455 E 20051215 AT 2000-962429 20000902 PRIORITY APPLN. INFO.: DE 1999-19942742 A 19990907 WO 2000-EP8581 W 20000902				

AB The invention relates to a potato cDNA which codes for **dihydroorotase** (EC 3.5.2.3). The invention also relates to the use of these nucleic acids for producing a system for screening for **dihydroorotase**-inhibiting compds., potential herbicides. Thus, transgenic potatoes expressing antisense **dihydroorotase** cDNA exhibited reduced growth. Growth inhibition was proportional to the degree of inhibition of **dihydroorotase** gene expression.

L14 ANSWER 3 OF 3 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN DUPLICATE 2

